"The Siriono Indians' huts are to them known as tuyúa. Those original huts of theirs are quite different from those nowadays occupied by them at Casarabe (fig. 11) [MPK: not reproduced for this file.] There however the Indians built one of the ancient type in order to show me what it looked like (figs. 12 [MPK: not reproduced for this file.] and 13). From people who had become acquainted with the Indians in their roving days I also gathered some information as to the appearance of the huts. [42]

In its exterior form, the ready-built hut is conical or like a beehive in shape. The walls of the hut are constructed of the leaves of motacu--a palm--closely packed into a thick layer, and with the stalks partly planted in the ground. The supporting framework may vary in construction, of which a variety is shown in the schematic drawing, fig. 13. As will be seen on the left, a straight, horizontally laid bough of a tree is supported by two forked poles. In order to give steadiness to this construction, it is leaned against the trunk of a growing tree and a palm.

One end of the horizontally placed pole seen on the right in the picture rests on a forked stick driven into the ground, while the other is supported by the first-mentioned pole and lashed on to it with liana string. Against these two horizontal poles are then leaned the motacu leaves that form the walls of the hut.

Strictly speaking, the Siriono hut is a combination of a number of primitive wind-screens. That the framework of a rude hut like the one just described may vary from one instance to another is only natural. Thus the ground plan of the hut may vary in

adaptation to the framework, and it is only from the thick layer of palm-leaves that the hut receives its conical or beehive shape. In the erection of a hut it is usual to take into account what trees there are on the building-site for constructional supports. And from their trunks, hammocks are suspended.

The use of forked posts must be regarded as a relatively recent element in the art of building, whose existence was made possible by access to iron tools. Prior to this, their office was no doubt filled by two crossed sticks tied together with liana rope (fig. 13 C) or by two upright sticks similarly jointed (fig. 13 B). Constructional details of this type I have observed among the Moré Indians on Guaporé in the erection of huts of a simpler kind."

4: Ryden--43-44 (1939) 1941 Siriono
116, 171, 342

"The Siriono hut is of such simple construction that it presents no useful object for comparative study. No exact counterpart of it is known to me from the South American forest region. The huts used by the tribes of that area for permanent habitation are all of a considerably higher development constructionally, although no doubt constructions like the above may occur in the case of occasional dwellings or shelters erected on hunting expeditions. Descriptions of such hunting shelters are however few, although TESSMANN (1930) depicts and mentions them from a number of Peruvian tribes. The hut of bee-hive shape must be regarded as [44] a cultural element peculiar to the primitive tribes of South America, dwelling-huts of this type being, e.g., mentioned by NIMUENDAJÚ (1934) from the little-known, primitive Oti Indians on the Capivara river in Brazil. The hut of bee-hive shape, which must be regarded as the nearest approach to the Siriono hut, is particularly well represented in the Chaco region. But here, as often is the case with the hunting shelters of eastern Peru (TESSMANN 1930, Taf. 29:3), one does not find the supporting frame construction. The posts or the palm-leaves are set down with their points supporting each other, while the proximal end is stuck in the ground. It is possible that in earlier times the Siriono possessed huts of this type, but that the use of the hammock--if indeed this cultural element was introduced comparatively recently among these Indians--caused them to modify the construction of the hut to the extent of their having to build the hut alongside rooted trees from which the hammocks could be suspended."

116, 778

"In the rainy season there is never any lack of water in this part of Bolivia, but in the dry season it may happen that even in the forest one finds difficulty in obtaining water. Near Casarabe there is a pool of water of which the Indians said it was the last to dry up. Once I went to look at it. It was situated in the midst of the forest. On the edge of the pool stood a branch (fig. 14) [MPK: not reproduced for this file.] on which were threaded the skulls of three monkeys and two coati (Nasua). At its foot lay a greatly decayed alligator skull, and in the fork of a neighbouring tree lay another monkey cranium. The branch [45] carrying the five skulls was of a shrub of which the Indian name is kodai. All other branches of the shrub had been cut down next to the ground, leaving only the one with the skulls after it had been trimmed of its twigs. This arrangement is called by the Siriono Indians ama rosakwari, meaning "water", or "flood-stick", and the only explanation I could obtain about it from them was that "it stopped the pool from drying up." It must be pointed out, that the name rosakwari also is given to the Siriono calabashes for storing water. A similar arrangement is mentioned by WEGNER (1931, p. 61). On his way to the Siriono Indians of the Rio Grande district he passed a water-pool. Alongside of it there was a branch on which a number of monkey skulls had been threaded, and to an adjacent tree had been tied some motum feathers and a couple of partlyworked mussel shells, a find which WEGNER (1932, p. 337; 1934 c, p. 816) considers mainly connected with hunting magic. Regarding the presence of the alligator skull, attention may again be drawn to the episode related by NORDENSKIÖLD (1922, p. 122), when one

of his helpers in the presence of a Siriono Indian shot an alligator and by doing so destroyed the friendly relations between the Siriono Indian and Norderskiöld. Hence it would seem as if the alligator possessed some magical significance for the Sirionos."

4: Ryden--49 (1939) 1941 Siriono
116, 352, 513, 283

"The only "fixture" attached to the Siriono hut consists of the hammock. This is made of cords spun from the bast of a tree, known to the Sirion as imbei, its Spanish names being bibosi, ambaibo or palo santo."

4: Ryden--49-50 (1939) 1941 Siriono
116, 283

"Hammock-netting--the hammock is called kisa--is woman's work. In the preliminary making of the cords for a hammock, the woman puts a few fibres between her teeth, and twines the free ends with thumb and forefinger while [50]at the same time twisting them together. A hammock cord of that kind, ready begun, is seen in fig. 60 D. [MPK: not reproduced for this file.] More fibres are joined to these two free ends as the work goes on. The finished cord is S-twisted, while its two component strands are z-twisted (1)).

1. In s-spun or s-twisted string the individual fibres run in the same direction as the diagonal line in the letter s, the thread being held in vertical position. When the fibres run in opposite direction the string is z-spun. In the work on the spinning of the south American Indians written by FRÖDIN and NORDENSKIÖLD (1918) quoted below, s-spun thread is named right-spun and z-spun left-spun (cf. MONTELL 1941, p.112).

Preparatory to the making of the hammock, the finished cords are rubbed with a waxlike substance, called iriti, a compound of wax, a little honey, and the juice of a plant known as edei, but the exact procedure I have never had an opportunity of witnessing although I think it probable that the waxlike compound is applied in a warm state. When this impregnation has been carried out, the cords are fairly stiff, smooth, and of a shiny blackness."

4: Ryden--50-52 (1939) 1941 Siriono
116, 286

"Two posts are hammered down into the ground at an interval equalling the intended length of the hammock. The waxed cord is stretched back and forth between the poles several times, forming two vertical planes of cords which are subsequently brought into one plane when the transverse, thinner cords are twisted in. The latter cords--those used as "weft"--are made of fibres or cotton but not impregnated with iriti [MPK: a wax-like substance] and are therefore more supple, and woolly. The weft cords, when fibres are used are z-twisted. When cotten[sic] is used the weft cords are s-twisted and the strands z-twined. In both cases the weft cords are woven in by using s-twisting. To the direction of the twist I shall recur later. The technique employed in the interweaving of the transverse cords will be apparent from the detailed figure 17 B. The terminal loops of the hammock by which it is suspended, are wound with string in the way seen in fig. 17C. In the hammock illustrated in fig. 13 [MPK: Fig. 17A, not reproduced for this file.] there are two transverse "weft"[52] cords. They are, however, as a rule greater in number, but nevertheless spread very far apart, on account of which the Siriono hammock has as appearance of inadequacy and primitiveness. Occasionally the "weft" is double, and the two cords are then twisted in in the same way as seen in fig. 17B."

B

C

Fig. 17. Siriono hammock rope.

4: Ryden--54 (1939) 1941 Siriono
116, 286, 171, 513

"As regards the technique employed in the making of the Siriono hammock, this technique is the one most generally used in South America (NORDENSKIÖLD 1924, p. 29) and everywhere employed in the making of both hammocks and baby-slings as well as other articles, e.g. honey-presses in the Chaco, satchels, etc."

4: Ryden--54-55 (1939) 1941 Siriono
116, 513, 171

"The method of suspending the hammock consists of taking the rope--a cord of the thickness of a bow-string--a number of times through the loops formed in both ends of the hammock. This is the most usual method of suspension [55] in the parts of South America that we are here concerned with, only the Huanyam, Chacobo, Atsahuaca and Chama using a different method in that they "button up" their hammocks (NORDENSKIÖLD 1924, p. 29). The same method I have seen in use among the Moré Indians, immediate neighbours in the north of the Siriono."

4: Ryden--55-56 (1939) 1941 Siriono
116, 286, 854

"In the manufacture of their baby-slings, agenéna, the Siriono use practically the same method as in the case of their hammocks. Here too, the work is quite naturally in the hands of the women, and the sling is prepared against the birth of the expected child. Its material is cotton thread. In shape it is, as seen in fig. 18 [MPK: not reproduced for this file.], cylindrical, in that the merging of the two vertical thread planes into one has been omitted at the interlacing of the transverse cords. Both the cords forming the "warp" and the "weft", in the baby-sling, are s-spun twisted and consist of two z-spun strands. The "weft" is twisted into the warp while being s-twisted. The cord [56] that is used in making baby-slings is dyed red with urucu before weaving is begun. No explanation of the reason for this could be got from the Indians, but most likely some magic conception lies at the bottom of this custom, although by now forgotten, or one that should not be revealed to outsiders."

4: Ryden--56 (1939) 1941 Siriono
116, 171, 854

"NORDENSKIÖLD (1919, p. 148, map 26; 1924, p. 173) has dealt with the distribution of the baby-sling in South America. It occurs throughout the entire region east of the Andes roughly down to the parallel of the southern tropic. The baby-sling is used by the Guarani, Arawak and Caribs as well as by more isolated tribes, by reason of which it must be regarded as an ancient culture element in South America. Hence its presence among the Siriono is not ascribable to any particular influence from tribes of higher cultural level."

The part of the arrow-shaft where the feathers, wito or troma, are to be applied, is smeared with iriti. For arrow-feathers the broader vane of the wing-feather of a bird known to the Siriono as yacú (in Spanish, pava) are almost always used. With the sharp-toothed jawbone of a palometa fish (fig. 24) the abovementioned part of the feather is cut away from the quill, beginning at the point and cutting towards the broader end (fig. 60A) [MPK: not reproduced for this file]. The quill is held tight in the armpit, and with the fish-jaw uneven parts are pared away from the section cut off the wing-feather. The arrow-feather is then completely severed from the wing-feather and, after having seen to it that a length of the arrow-shaft exceeding that of the arrow-feather has been smeared with iriti, the feather is stuck on the shaft. The arrow-feathers are attached without any spiral twist and in the same plane as the notch carved in the string-plug. The butt end of the arrow is then wound over with fine thread so that the ends of the feathers in particular are firmly secured. The part of the lashing that is between the terminals of the arrow-feathers is fairly sparse. What excess of wax there may be on the shaft above the feathers is plastered down over the lashing and smoothed out with the nail of the thumb so that the fine thread that holds the feathers will always be protected. Now and again in the course of the work the wax is slightly heated over the fire, and when the feathers are fixed on and ready, they are trimmed so as to correct an unevenness caused to them in the application of the lashings. [60]

The fine thread that is used for these arrow-lashings, particularly in fastening the

this file]. Before use, it is slightly warmed over the fire. When the point has been fixed in the shaft, the end of the shaft is painted over with iriti and given a lashing of fine cotton thread. This lashing, which is done close to the fire, is, like the one at the butt end of the shaft, designed to prevent the reed from splitting. The thread used in this process has generally beforehand been rubbed to and fro on a lump of iriti, so that, when the completed lashing is warmed up, the waxy substance can be spread out, which makes the finished lashing look almost as if coated with black lacquer. This later smoothing out of the glue over the lashing is however fairly infrequent.

The barb, wasi, is cut out of a separate small piece of chonta and stuck on immediately below the point by means of iriti and a lashing smeared with iriti (fig. 20 A1).

Into the opposite end of the arrow-shaft is driven a conical plug, auda, the pointed end of which has been smeared over with iriti (fig. 20F). In the basal end of this plug there is a notch for the string, cut out with a tool known to the [59] Siriono Indians as sirasi. This consists of a rodent tooth tied on to a handle of monkey bone (fig. 24) [MPK: not reproduced for this file]. As already described, this end of the arrow-shaft is also provided with a lashing.

Occasionally the lashings on the ends of the arrow-shaft are made with thread that is somewhat thicker, and dyed with urucu. This always seems to be the case when new-made thread is being used. Often however thread is taken from old arrows, and it is especially in such cases that the lashings are provided with a protective coating of iriti.

"The only weapon possessed by the Siriono is the bow and arrow. Bows and arrows are very long, the arrows without doubt being the longest in the world (fig. 22) [MPK: not reproduced for this file].

Two different types of arrow occur, one with a straight, barbed, wooden point (fig. 20 A), the other with a bamboo point (fig. 20B). In the literature, mention is also made of a bone-barbed arrow (CARDUS 1886, p. 280), but arrows of that type were unknown to the Indians of Casarabe. [58]

Arrow-shafts are made from a nodeless length of reed (Gynerium saccharoides) which, cut to size, is carried in bundles home to the hut, where the reeds are left to dry. Among the arrows I brought back from the Siriono, there is however one with a shaft of noded reed.

In the making of the arrow, the reed is first warmed over the fire and made perfectly straight.

The point, which is of palmwood, chonta--its Siriono name being sirĭua--is pointed at both ends and inserted into the broader end--the root end--of the reed that is to form the arrow-shaft. In this process is used the waxy substance iriti, already referred to, as a kind of cement. As already said, this consists of bee's wax, a slight addition of honey, and the juice of a plant which the Siriono Indians call edei. These ingredients are mixed over the fire and, when ready, this gluey substance, made up into black lumps of the size of a man's fist, is kept in baskets in the hut (fig. 21) [MPK: not reproduced for

feathers, must as a matter of fact be difficult to manufacture, for it is always carefully saved up from broken arrows. For the same reason sewing cotton is an important article of barter among the Siriono.

The second type of arrow has a point made of bamboo (fig. 20). The point is fastened by means of iriti and a lashing to the flattened side of the fore-shaft, which is made of chonta, and then stuck in the arrow-shaft in the same way as an arrow-point made of that material (fig. 20 B 1-2).

The Indians frequently examine their arrows at home in their huts, and give special attention to their being straight. Should an arrow have become crooked, it is warmed and straightened. The conclusion of the inspection is always marked in a certain way. The butt end is pressed hard against the thumb with the forefinger, which at the same time is slid over the edge of the string-plug, when a snapping, singing note is produced in the arrow.

An arrow broken in two is mended by wedging a spindle-shaped piece of chonta wood into the hollow shaft in the way shown in fig. 20E. As adhesive, iriti is used, and a winding of thread is laid on both sides of the break to keep the arrow-shaft from splitting.

Both of the arrow-types described above are known in Siriono as óva. The bamboo-pointed kind is especially used for hunting the jaguar and other large game. The other type is used for monkeys and birds, and also for shooting ray in the rivers. Both types are also warweapons."

116, 171, 411

"The method used by the Siriono for fastening the feathers is the one known as "Peruvian cemented feathering". This method, together with the so-called "East Brazilian feathering" (NORDENSKIOLD 1924, p. 45, map 5), are the most wide-spread in South America while also being the most primitive. On wooden-shafted arrows, Peruvian cemented feathering and glueing on of the feathers are the only fastening methods in use. It would also seem as if in conjunction [62] with Peruvian cemented feathering, apart from the lashing, some sort of adhesive for fastening the feathers were always used. On Siriono arrows this adhesive consists of iriti, while on arrows, e.g., from the tribes on the Pilcomayo river it consists of wax only, which, besides, appears to be the more common. The method of fastening the arrow-feathers known as East Brazilian feathering is practically speaking nothing but a simplification of the method here first referred to, in that the latter method only consists of fastening the two ends of the feathers with the lashing. The wide distribution of the above-mentioned two methods in both North and South American proves their extreme antiquity. More modern fastening methods, such as "Arara feathering" (NORDENSKIÖLD 1924, p. 47) and "Xingu sewed feathering" (NORDENSKIÖLD 1924, p. 47, map 4) do however occur among tribes that are neighbours, or comparative neighbours, of the Siriono. To Nordenskiöld's list of tribes that use the Xingu sewed feathering must also be added the Moré Indians who, as already mentioned, are living immediately north of the Siriono area, on the Guaporé river. These more modern fastening method [sic] however--as well as the East Brazilian feathering--have

not been adopted by the Siriono who like a good many other tribes of eastern Bolivia (NORDENSKIÖLD 1924, p. 46), of a considerably higher cultural level than the Siriono, have instead adhered to the primitive method."

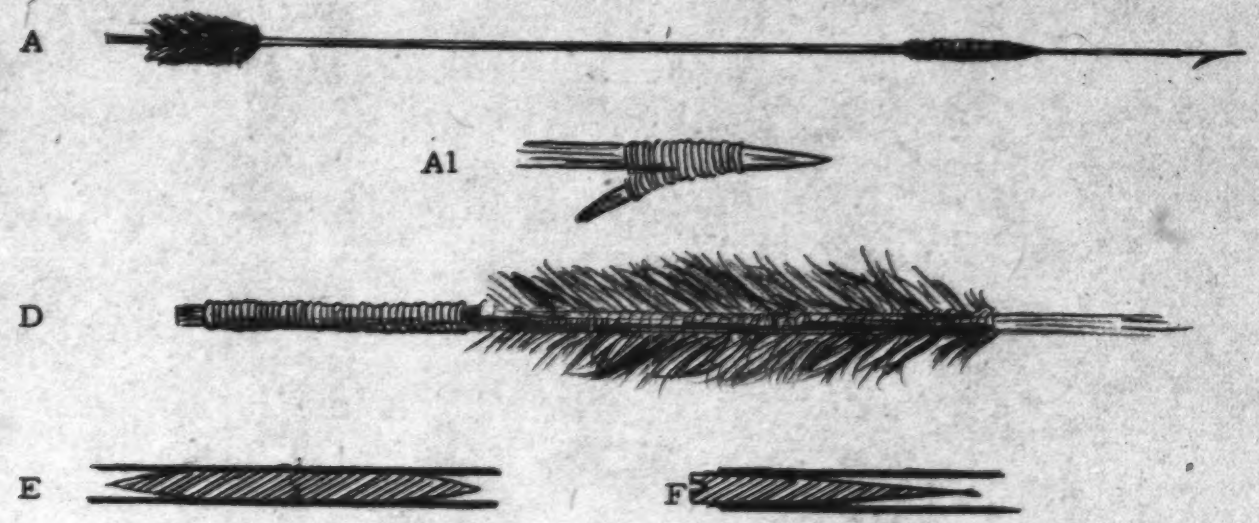

Fig. 20. Bow and arrows. A-C 1/20.

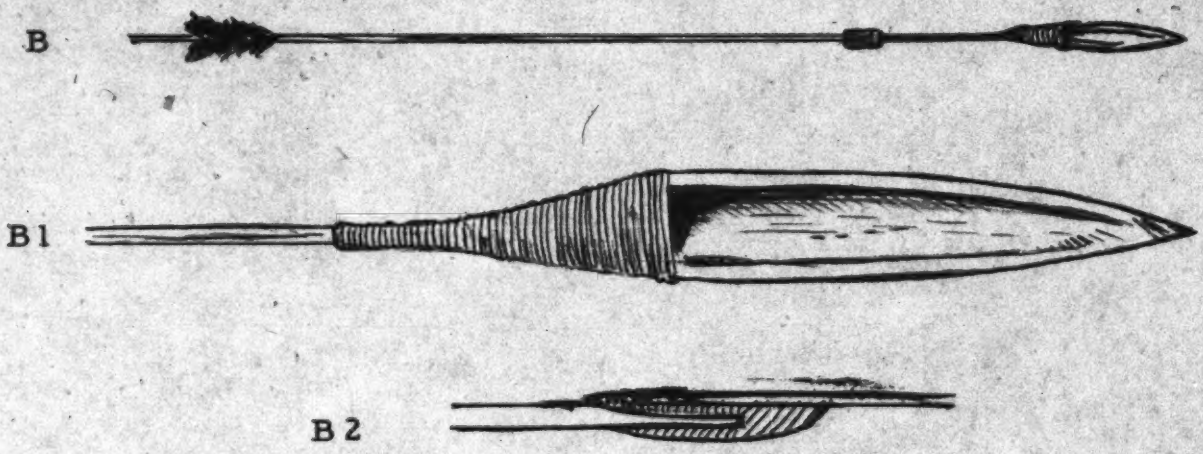

Fig. 20 Bow and arrows. A-C 1/20.

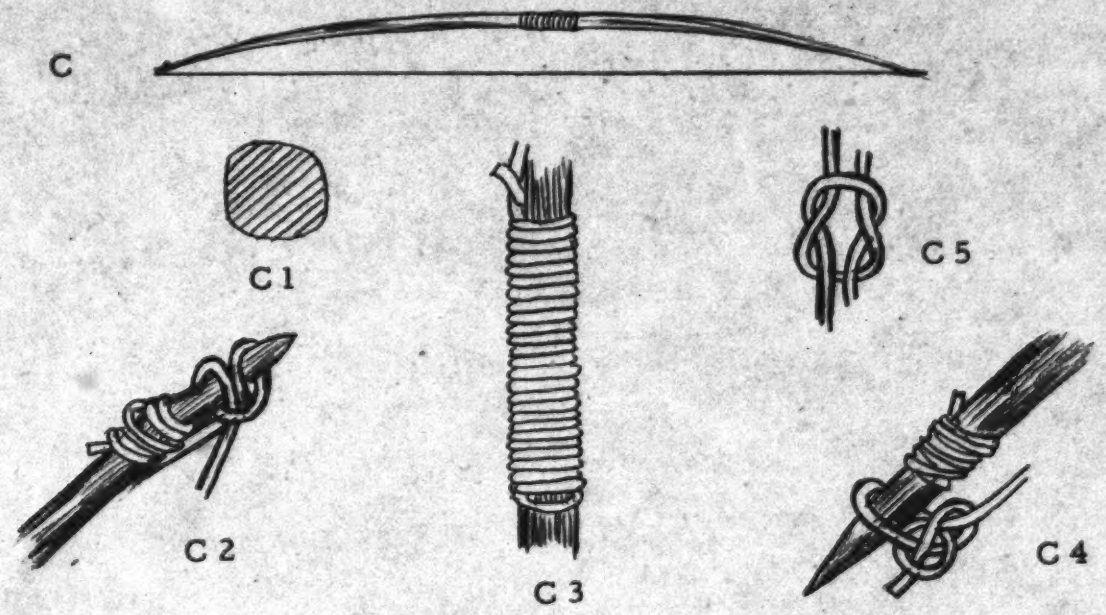

Fig. 20. Bow and arrows. A-C 1/20.

4: Ryden--62 (1939) 1941 Siriono
116, 411

"Another primitive feature possessed by the Siriono arrow is its barb. This detail is not carved out of the point of the arrow, but consists of a separately carved, sharp-pointed piece of wood, lashed on to the arrow. This simplifies its manufacture, since even if not impossible, it would be very difficult--with the tools for working wood that are available to the Siriono Indians rodents' teeth, and shells--to carve the barb out of the arrow-point itself. CARDÚS (1886, p. 280) states that barbs are also made of bone."

4: Ryden--62-63 (1939) 1941 Siriono
116, 411, 171

"The method of reinforcing the butt-end of the arrow with [63] a wooden plug may be an improvement that the Siriono have borrowed from some other tribe. From what NORDENSKIÖLD (1924, p. 47, map 6) says of this plug, or other strengthening device for the nock-end of the arrow, it appears that reinforcements of this kind have a wide distribution in South America and, like strengthening lashing, occur among many of the Siriono Indians' nearest neighbours. These tribes, so far as I have been able to ascertain, use the same material for arrow-shafts as do the Siriono, and it is the soft consistency of that material that has necessitated the strengthening of the nock-end of the arrow."

"The bow, gira, (fig. 20C) is made of chonta wood. Its transverse section is almost circular, the side facing away from the string being slightly flattened (fig. 20 C1). Prior to the introduction of iron tools, the bow was made by the help of rodent teeth and pieces of shell. The ends of the [64] bow are pointed, and have no notches for the bow-string. A piece of string instead is wound a few turns round the bow in order to prevent the bow-string slipping when the bow is drawn. The pointed ends of the bow are used as a sort of spear: in fishing off wounded adversaries by stabbing them in the chest and abdomen.

The bow-string, which consists of a three-stranded fibre cord, is always of such length that part of it has to be wound up on the bow (fig. 20 C3). This part forms, as it were, a reserve of bow-string, in case the latter should break. This frequently happens at the end where the string is doubled. Fig. 20 C5 shows the knot used in the mending of the bow-string. The material in the latter is the same as in the case of the hammocks, viz. imbei.

When the bow is standing unused in the hut, the string is often removed. I also noticed that the unstringed bow was frequently placed outside the hut, in the forest surrounding the hut. This was probably done in order to preserve the elasticity of the material. RADWAN (1929, p. 294) states that for the same reason the bow was laid to soak in water (Cf. SCHERMAIR 1934, p. 520).

The Siriono Indians wind a length of string round the left forearm as a protection

removed, whereupon the staves in the rough are split out of the remaining cylinder of harder wood. These unformed staves are thus of the flattened shape that prevails in the finished bow. It is therefore possible that, through the introduction of iron tools, the Siriono have been able to modify the shape of the bow, and thus from a flatter section due to the cutting out of the raw material have passed on to the more exacting rounded section."

against the slap of the bow-string in shooting. ...the bow, in being drawn, may occasionally be held in the right hand."

"In eastern Bolivia it is only the Guarayu Indians that use a bow-string made of cotton, all others use vegetable fibre as material for the bow-string, as do the Siriono (NORDENSKIÖLD 1924, p.44). Even the material for the bow among the Siriono is the one that is common to eastern Bolivia, viz. chonta wood, but the shape of the bow is different. While the bows of the other tribes are more or less flat in section, that of the Siriono bow is almost circular. Yet another detail points to the primitive character of the Siriono bow: there are no notches carved in its ends for the string. In their stead a few turns of a piece of string [65] prevent the bow-string from slipping down the stave (fig. 20 C2, C4). NORDENSKIÖLD (1919, p.36), on the authority of data published by P.W. Schmidt, points out that bows without notches carved for the string are mainly found in southern South America and among some few tribes in Bolivia and Brazil, and that bows of that type belong to an ancient phase of the history of South American civilization. It should however be pointed out that in earlier times the Sirion bow may have had a more rectangular section. NORDENSKIÖLD (1911, Tafel I: 2c), it may be noted, depicts a Siriono bow acquired in 1908--09 in the Sara province of Bolivia which is almost rectangular in section. Among the Quruñgu'a, [66] bows of this section often occur (WEGNER 1934 b, p. 165), and with a width of up to 10 cm. That bows made of chonta are generally more or less rectangular in section is due to their method of manufacture. From what Professor Erland Nordenskiöld once told me, this shape arises from the fact that in making bow-staves, the inner and softer portion of the chonta stem is first of all

4: Ryden--66 (1939) 1941 Siriono
116, 123, 411, 224

"With a view to testing the marksmanship of the Siriono and the hitting power of a bow-shot I had a man shoot at a range of 25 metres two chonta-pointed arrows, one at a slab or wood called in Spanish adro, and the other at a slab of amarillo. Both kinds of woods are hard; in both cases the thickness of the plates was 3 cm., and the size about 15x35 cm. For the first shot the plate was set up against a log of another very hard kind of wood. The arrow split the plate and penetrated some 3 cm. into the log. In the second case the target was nailed on to a treestump so as to project freely above it. The arrow entered up to the lashing between point and shaft, splitting the board in two (fig. 23).

For filming purposes I had a man shoot three arrows successively into the air, pausing between each shot. The arrows rose to about the height of a five-storey building before turning downwards and with high velocity striking the ground some 75 metres away. The bowman could not see where the first arrow fell, so had to aim the other two more or less at random. A circle with a radius slightly exceeding one metre would have covered all three arrows."

4: Ryden--69 (1939) 1941 Siriono
116, 231

"It may be mentioned that the Siriono possess neither the domestic fowl nor the dog. At Casarabe the Indian name for dog was iakúa, i.e. the same as for jaguar, which proves that the Indians had no earlier knowledge of the dog."

4: Ryden--71 (1939) 1941 Siriono
116, 412

"The only tools possessed by the Siriono consist of the above-mentioned chisel-like object known as sirasi, which is a rodent's tooth shafted with the bone of a monkey, pieces of shell or mussel, knives adapted from the jawbone of the palometa fish, and awls made of the caudal spine of the ray. Pieces of shell are used more or less as planes in working wood. A shell and a mussel in my collection Dr. NILS HJ. ODHNER has identified as Ampullaria bridgesi Reeve and Anodontites trigonus Spix. The latter is also used in pottery-making."

"WEGNER (1934, p. 24) has pointed out that the sirasi [MPK: a shafted rodent's tooth] is also used among the Guayaqui Indians, whose culture and mode of life present a primitiveness almost identical with that of the Siriono. I feel it however incumbent to stress that this implement is used among several other tribes in the forest region of South America who possess a more highly developed culture, e.g. the Huanyam and the Huari (NORDENSKIÖLD 1924, p. 115); SALATHE (1932, p. 306, fig. 16) also depicts the implement in question from the Karimé Indians; KRAUSE (1911, p. 270, fig. 122) from the Karaja and the Savaje (p. 361, fig. 197); v.d. STEINEN (1897, pp. 199 and 375) from the source region of the Xingu, from the Bororo and other tribes, and I have myself seen it used among the Moré Indians on the Guaporé river. In these different instances, only the material for the handle varies. This rodent's tooth implement, as also the knife of palometa jawbone, would herefore seem to belong to the primitive cultures of the South American forest region, as well as to tribes of more advanced culture, although among the latter its use is occasionally specialized, as, e.g., among the [72] Karaja and the Savaje, who use it for grooving their clubs. The tribes among whom it is still found, -- at all events at the time when their use of the rodent's tooth implement was observed -- are such as were living isolated and almost out of touch with the whites. The introduction or iron tools is especially apt to supersede implements of the rodent's tooth type, and it may therefore well be supposed that the latter formerly had a wider distribution than it is now possible to ascertain. One can frequently observe that when Indians are

using an ordinary knife for carving wood, etc., they move the knife towards the body instead of, as white men generally do, away from the body. Probably this may be accounted for by the Indians formerly having used the hafted rodent's tooth implement with which it was necessary to work towards the body.

As regards the use of shell as tools, this also prevailed among the mound-builders in the present Siriono region."

"The greater part of the Siriono household furniture consists of basket-work. This may be divided into two groups, viz. those which are more carefully made and designed for storing away minor articles at home, in the hut, and the kind that are for occasional service, such as carrying home gathered fruit, etc. The latter category are only a moment's work in the forest, and are thrown away as soon as emptied. [74] Palm-leaves --leaves of the motacu--would seem to be the only basket-making material. Baskets are made by both men and women, although the manufacture of certain types, e.g. the storing-baskets, is mainly the women's concern. Only two basket-techniques are represented among the Siriono, viz. checkerwork and twilled work. Basket types, too, are few in number.

In the huts, mats--parichi--are very common. They are used for sitting on, or occasionally as sleeping mats.

In the making of baskets the technique is at first the same as in the case of a mat, the only difference being that the points of the leaves are not interwoven. The woody leaf-stalk is not removed, as its presence in the weaving lends stability to the basket and makes the work easier. The inner woody leaf-stalk is however cut away when the basket has been built up roughly to its intended height, the remaining parts of the leaf-stalks are then folded together so as to form the border of the basket, whereupon, at the junction of the basket sides to be, the free leaves are woven into each other. Lastly, the leaf-points at the bottom are woven together. It is in consequence of this mode of co-

construction that at first sight the finished basket [75] appears to have been built up of two palm-leaves laid one on top of the other and then woven together.

In the smaller depository baskets, the leaf-points are woven into the basket sides so as to be put out of sight, and giving the basket a rectangular shape with a more or less circular border. Small and flattened baskets of this type are, inter alia, used as receptacles for down of which to make feather ornaments. In the larger depository baskets, at the bottom the leaf-points are woven together into a plait, visible both on the inside and outside of the basket. Hence this kind of basket is of a somewhat bulgy, oval shape. Smaller baskets constructed in the same way are flattened from the sides, [77] Baskets designed for carrying on the back are called inanku, or panáku, the other types inu, or takuru.

Fire-fans, tekua, are constructed in the same way as the mat. In the mats, the points of the leaves are woven together into a plait along one edge, while in the fire-fans this edging plait frequently occurs, though just as often the leaf-points are woven in and concealed in the weaving proper.

Carrying-baskets designed for permanent use are entirely absent."

4: Ryden--80 (1939) 1941 Siriono
116, 415

"For carrying water, the Casarabe Siriono Indians use calabashes. They are of rounded shape, with a small opening where the leaf-stalk has been. These water calabashes are kept separately in the hut, and from the place where the water is drawn they are carried in baskets of the type here described. [MPK: i.e., non-permanent leaf baskets]"

4: Ryden--80 [2] (1939) 1941 Siriono
116, 415

"The leaf-stalk in the basket in fig. 37 has the same shape as in the preceding instance [MPK: i.e., bent into a U-shaped framework]. On the rear side of the basket there is a fibre cord tied on to the two upright ends of the leaf-stalk. This constitutes the bearing band, and, in carrying, the basket is placed on the back with the bearing band resting against the forehead."

4: Ryden--81
116, 415

(1939) 1941

Siriono

Fig. 37. Back-borne carrying basket. 1/6.

4: Ryden--84 (1939) 1941 Siriono
116, 415

"The Indians of Casarabe use calabashes for carrying and storing water. The calabashes are usually spherical or oval, with a small opening at the place where it was attached to the stalk. As already mentioned, when containing water or other fluid they are kept in baskets or suspended in strings, fig. 41. The Siriono name for water-calabash is ía or rosakwari.

The Siriono do not know the method of mending a crack in a calabash by sewing it together and sealing it up with wax. Should a spherical calabash crack, it is instead remade into a bowl, yavoke. If a calabash of the oval shape develops a crack that runs from the mouth of the vessel down towards its base, both sides of the crack are cut away so as to stop it from widening, and in the result one has a bowl of the shape shown by the calabash on the left in fig. 40. In the case of a spherical calabash, on the other hand, it is trimmed down so that the base is left to serve as a bowl.

Small feather ornaments like those seen in figs. 56B and C [MPK: not reproduced for this file] are also stored away in calabashes provided with a stopper consisting of a shelled maize-cob."

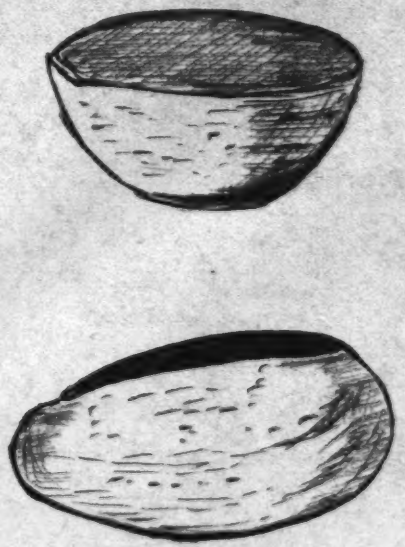

Fig. 40. Calabash bowls. 1/6.

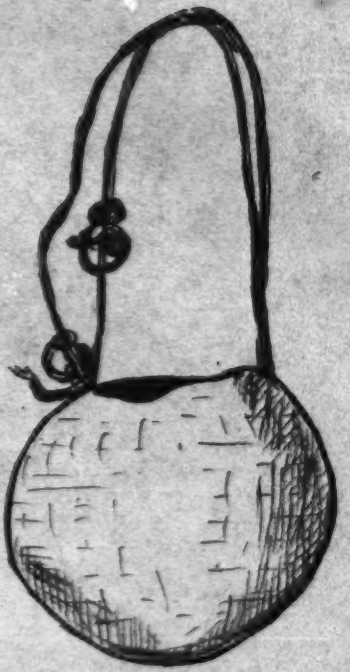

Fig. 41. Hanging calabash. 1/4.

4. Ryden--86 (1939) 1941 Siriono
116, 283, 413, 171

"Cotton-spinning--like pottery--among the Siriono is exclusively women's work. The Sirion use spindles of remarkably large size. Two of these, known as niñu, are reproduced here, fig. 43, B and C. The spindle-rod tapers towards each extremity. The whorl, which is of wood or earthenware, is small in relation to the spindle and passed over the bottom end of the spindle. On the spindle B, the whorl is of wood, and its four-sided shape is probably in this case due to the nature of the material. This latter shape of spindle-whorl also occurs among the Mosetene Indians (FRÖDIN and NORDENSKIÖLD 1918, fig. 5b). In spindle C the whorl is of earthenware and practically spherical. Disk-shaped spindle-whorls of earthenware also occur."

4: Ryden--86-87 (1939)1941 Siriono
116, 283

"The cotton fibre to be spun into thread is carded out with the hands into an elongated roll which during the operation is allowed to hand down freely from the right hand, or wound [87] round the right forearm or wrist. The spinning is done in sitting posture. The upper part of the spindle is rested against the outer side of the left thigh, and its point stood on the ground, fig. 42. The spindle is given a rolling motion by sliding the left palm against the thigh in the direction of the knee."

4: Ryden--90 (1939) 1941 Siriono
116, 283

"The twined cords from the Siriono that these authors [MPK: Frödin and Nordenskiöld] have examined, all show that with that tribe all twisting is done clockwise--the thread is s-spun. This agrees with what I myself have been able to ascertain from examination of, e.g., the bow-strings made of twisted fibre. With caertain [MPK: sic] modification, however. As will be seen from the hammock-cord ready begun, fig. 60 D [MPK: not reproduced for this file] in this case the finished section of the cord is s-twisted, while its two strands are z-twisted, which is natural here, being a prerequisite to joining the two strands into one cord. The same modification applies to the bow-strings, with the exception that these are three-stranded. Unfortunately I do not know the method by which the three strands are twisted together."

4: Ryden--90 [2] (1939) 1941 Siriono
116, 283, 171

"On two of the spindles collected, the thread remaining on them is z-twisted, and the thread on which the woman is spinning in fig. 42 [MPK: not reproduced for this file,] must also be z-twisted, seeing that the women is twisting it against her left thigh. If it had been against the right, the thread would have been s-twisted, provided the strokes of the hand were, according to general usage, made in the direction of the knee. A similar posture in spinning is adopted by a woman seen in one of the pictures in NORDENSKIÖLD'S(1931) work on the Siriono Indians. Examination of the arrows in my collection reveals, however, that the thread forming the lashings on them is s-twisted. This thread is, however, notwithstanding its thinness twined of two strands, each z-twisted. Z-twining is thus fundamental with the Siriono, even though the finished article shows s-twining by reason of its being composed of two or three z-twisted parts. The thread remaining on the two spindles must therefore have been intended to be twined into a thicker thread. It would therefore seem as if in this respect the Siriono to some extent differ from the remainder of the eastern Bolivian tribes, seeing that FRÖDIN and NORDENSKIÖLD (1918, map 3) ascribe s-twisting to the latter."

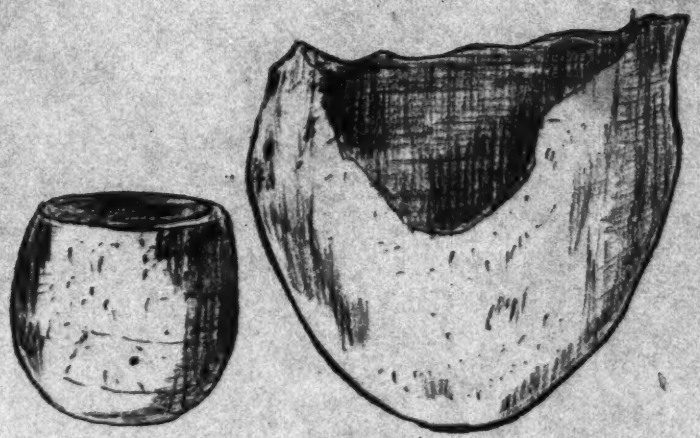

Fig. 44. Two Siriono pots. 1/6.

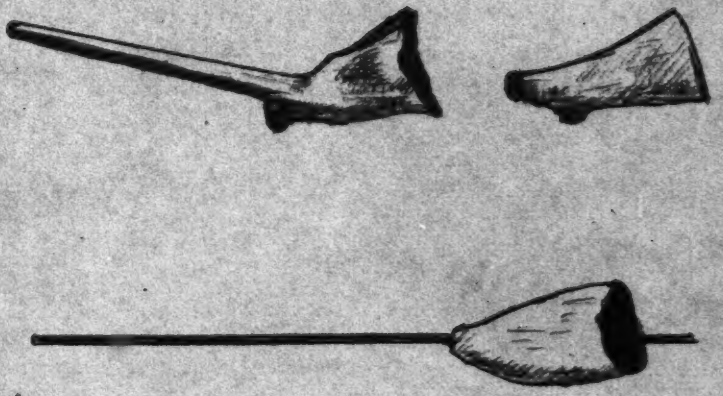

Fig. 46. Two tobacco-pipes and a partly finished pipe. 1/6.

4: Ryden--92
116, 323, 415
4: Ryden--97
116, 323, 276

(1939) 1941

Siriono

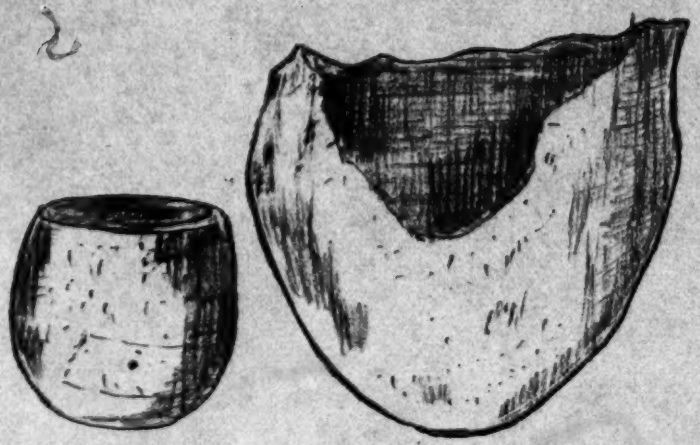

Fig. 44. Two Siriono pots. 1/6.

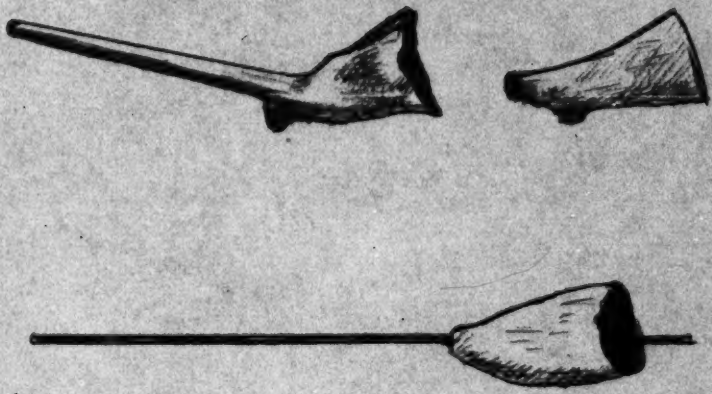

Fig. 46. Two tobacco-pipes and a partly finished pipe. 1/6.

"Clay vessels, ñu, ñui, spindle-whorls and tobacco-pipes, yagúa, are the only objects that the Siriono manufacture out of earthenware. This work falls to the lot of the women.

It is only the clay of certain localities that lends itself to the manufacture of clay vessels and tobacco-pipes. The woman I saw making a clay vessel--the small vessel in fig. 44--and a tobacco-pipe met with failure when she set about firing the vessel. It cracked in the cooling process. The woman maintained that this was owing to her having taken the clay from a place near Casarabe. The clay from that spot was no good; she was in the habit of taking her clay from a place further away, where it was known to be of better quality. There are many places in the neighbourhood of Casarabe that are renowned for their good clay supply.

The clay is fetched home in lumps the size of a man's fist. It is then moistened and immediately mixed with [93] black, soot-like ashes obtained by burning the fruits of a palm. The substance thus admixed is called taten, or tatava. The potter takes a lump of clay, not quite as large as a fist, and dusts it over once or twice with the ashes while kneading it and working it into a flat cake about 3 cm. thick and with a diameter of 7--10 cm. These clay cakes are put aside on a mat and covered over with leaves, and as soon as a sufficient number of these cakes have been made, the manufacture of the clay vessel begins.

With the point of a knife a small, conical pit is made in the ground, 5 cm. deep and 7

cm. in diameter. The walls of this pit are moistened, smoothed, and strewn with ashes. One of the prepared lumps of clay is formed into a roll between the moistened palms of the hands. This roll is folded up on itself into a spiral so as to form a small conical cup--the bottom of the intended vessel. The wall of the vessel is then built up of similar rolls of clay, laid on one tier or circle at a time. When one or two tiers have been laid, the seams between the rolls are smoothed out while at the same time the clay is squeezed so as to make the walls slightly thinner. The bottom section thus produced is set down in the pit, and the building up of the wall of the vessel by adding more rolls is commenced. As each roll is placed in position, the seam between it and the one next below is smoothed out, while the vessel as a whole is each time worked up. In this way the vessel, from the start rather small and with thick walls, is by this repeated manipulation enlarged and its walls made thinner. The final polishing of the vessel is made with a slightly moistened piece of mussel-shell, íta, or mollusc-shell, urúka.

The vessel is then put aside in the shade, covered over with a couple of large leaves and left to dry for two days, after which it is ready for firing. Five thick tree-branches are placed in the fire, ends together. When they are well alight--or rather, aglow--they are pulled slightly apart, [94] the glowing embers in the centre between the ends of the branches are spread out, and here the vessel is placed, mouth upwards.

The firing is kept up for some hours, care being taken that the heat is even all the time. When the vessel is considered sufficiently baked, the glowing firebrands are

removed, and the cooling process begins. This consists in dipping chips or shavings from the wood of a tree called kɒroi in water and with them brushing over the vessel. While this cools it, the juice contained in the wood-shavings also stains the ware to a brown or mauve tint. The Indians think this a beautiful colour, but it is not very permanent and soon fades away, especially on pottery vessels. Not long after the cooling process has begun, with the help of a couple of sticks the vessel is lifted out of the fire and placed on the ground to continue its cooling.

The earthenware of the Siriono is of inferior quality. When a vessel has been in use for a time, its outer surface becomes rough and full of cracks, and the life of these vessels is not very long. The fired clay is, moreover, rather porous. The art of pottery is thus on a fairly primitive level among the Siriono."

4: Ryden--94-95 (1939) 1941 Siriono
116, 415, 252, 171

"When used in cooking, earthenware pots are placed direct on the fire, propped up with a firebrand or two, or with the ashes. The method of using special supports for propping up cooking vessels is unknown, and it seems strange that the Siriono have not adopted this culture element. While [95] excavating a mound near Casarabe I recovered a massive cylindrical support for cooking vessels of a type occurring in the Amazonas region (fig. 62E). This object was found very near the surface. Supports for earthenware vessels are today used by Movima and Cavina Indians in eastern Bolivia, but archaeological discoveries indicate their having been more widely diffused in ancient times (NORDENSKIÖLD 1924, p. 126, map 14). Among South American Indians, pottery is women's work, and one would think that if the Siriono lived side by side with the mound people in the same way as prior to the pacification they lived as neighbours of the whites, they ought by direct contact, or through the abduction of women, to have obtained a culture element of this kind. This however is not the case. This detail suggests immigration into the mound area of eastern Bolivia having taken place after the disappearance of that culture."

4: Ryden--96-97 (1939) 1941 Siriono
116, 276, 323

"The clay used in the manufacture of tobacco-pipes is prepared in the same way as that for clay pots. The pipe is formed in one piece out of a lump of clay, which is egg-shaped to begin with. In this, an indentation is first made with the forefinger, so that the clay assumes the shape of a small cup--the pipe-bowl to be. Next, a thin wooden stick of even thinness is pushed through the bottom of the cup, and then the clay of the bottom part is gradually worked over the stick until the pipe-stem is complete in its full length (fig. 46). At the same time the bowl is given its final form in that the small projection that is found on the under side of all Siriono pipes is modelled into shape.

The pipe is allowed to dry with the stick remaining in the stem. It is removed however immediately before the [97] firing. In the firing, the pipe is placed directly among the embers. It is cooled in the same way as in the clay vessels."

4: Ryden--97-98 (1939) 1941 Siriono
116, 276, 417

"For drying tobacco leaves, the Indians build a drying rack over the fire. A rack of this kind, ira, is seen in fig. 47. [98] It consists of a woven mat like those used for sitting, or sleeping, although smaller, which is placed on a framework consisting of three stakes driven into the ground, and two horizontal sticks. The mode of its construction will be apparent from the illustration. The mat is known by the same name as its larger counterpart, viz. parichi, and it measures 120 by 40 cm."

4: Ryden--98 (1939) 1941 Siriono
116, 276

"The Siriono frequently use a pipe of the form shown in fig. 46, top right. This does not constitute a special type of pipe, its divergent form only being due to the long pipe-stem having been broken off."

4: Ryden--98 [2] (1939) 1941 Siriono
116, 276, 171

"NORDENSKIÖLD (1919, p. 91; 1924, p. 143), and MÉTRAUX (1928, p. 116), have shown that pipe-smoking is, on the whole, unknown in the Amazonas region, where the Indians smoke their tobacco in the form of cigars. Of the tribes neighbouring on the Siriono, only the Guarayu Indians use the tobacco-pipe. This tribe immigrated as late as the 16th century into their present area of occupation (FRÖDIN and NORDENSKIÖLD 1918, p. 33; 1913 p. 246). Apart from this, the nearest region where tobacco-pipes are used is the Chaco, where both wooden and earthenware pipes occur, and it is therefore possible that the clay pipes of the Siriono point to southern influence. The form of the Siriono pipe is however absent in the Chaco."

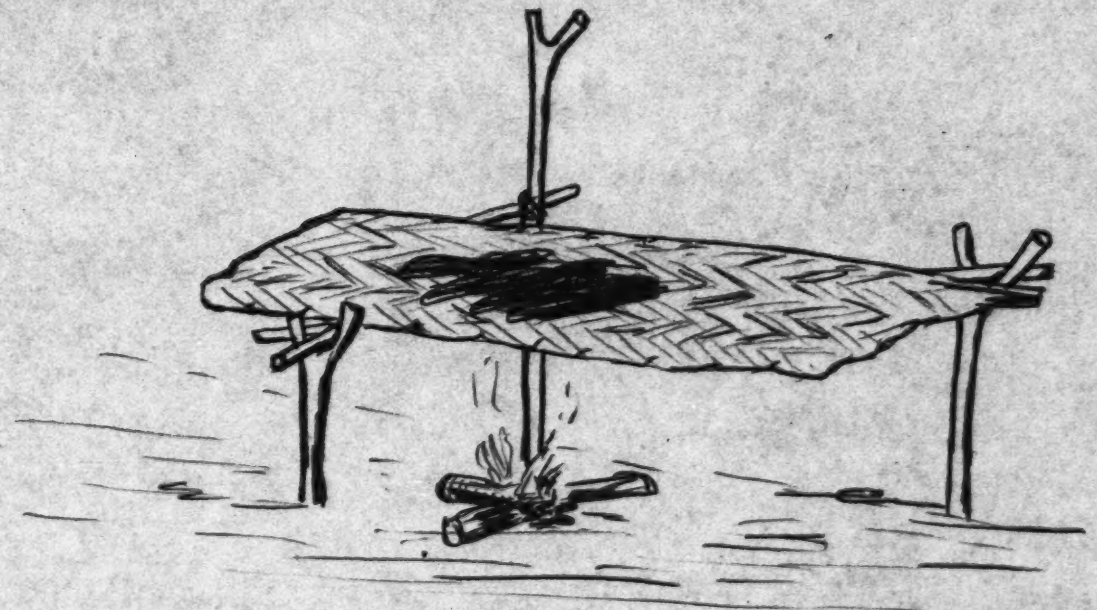

Fig. 47. Drying rack for tobacco leaves.

4: Ryden--101 (1939) 1941 Siriono
116, 177, 534

"The Siriono--at all events those of Casarabe--do not seem to possess any musical instruments. It is true that they possessed a bamboo flute--with four finger-holes, and side-blown--but this they have obtained from the white settlers. Their name for it was takua."

→

4: Ryden--101-103 (1939) 1941 Siriono
116, 524, 411, 171

"The only toy I have seen the boys at Casarabe use is a sling, raseke (figs. 49-50) [MPK: not reproduced for this file], made out of a spathe from a maize-cob and two pieces of string. One of the slings (fig. 50) is provided with a finger-loop. Most probably the sling [102] among the Siriono is a borrowed element in spite of its native name, seeing that it is made of a part of the maize plant. NORDENSKIÖLD (1919, p.44, map 4) partly on the strength of an investigation made by FRIEDERICI (1911), has emphasized that the sling in South America is a culture element of remote antiquity, and that its use presupposes open terrain. Friederici states that the sling is in use among the Mojo, and Nordenskiöld mentions further two tribes in eastern Bolivia, viz. the Canichana and the Itonama, in which region he supposes the sling to be a post-Columbian element, [103] introduced in connection with cattle-breeding (NORDENSKIÖLD 1924, p. 65)."

4: Ryden--103 (1939) 1941 Siriono
116, 182, 411, 524

"It is also noteworthy that I never saw any toy bows in use at Casarabe. Young men, or boys, of fifteen or so already used bows and arrows as large as those of the older men. WEGNER (1932, p. 336) refers, however, to toy bows. The absence of these at Casarabe probably points to an incipient disintegration of the native culture. Not even toys of such simple character as dolls, nor such common pastimes as stringfigures, are known to the Siriono."

4: Ryden--103-105 (1939) 1941 Siriono-1
116, 535

"Both men and women dance, though in different ways. Dancing, yuruki, is accompanied by a sort of singing. Both sexes form a circle when dancing. They dance at the same time, although each sex by itself. How the men hold on [104] to one another while dancing is seen in fig. 52. Among the Toba, Mataco, Choroti and other Chaco tribes, the men hold each other in the same way when dancing.

The dance is begun by the men turning their faces upwards (fig. 48) [MPK: not reproduced for this file]. The circle of dancers remains stationary, with only an alternate stamping of feet on the ground while emitting sharp cries of ira, ito, eru, aso, ayo, or tenda, followed by yaro. Of some few of the abovecited dancing-cries I have managed to obtain the translation. Tenda, for example, means "sun", yaro, "coming back" --"the sun is coming back"--, and eru is translated by the Spanish word "amor". Often names of animals or plants are used. In the marking of time, each word is thrice repeated.

After a while the men bend down their heads, the circle begins to move round and curve in and out in various places, while there the same stamping is done as before (fig. 51) [MPK: not reproduced for this file]. At this point one of the men begins to direct the time-marking cries that accompany the dance, which till then anyone could have shouted out. It is now the leader that takes up the time-marking word, which is then repeated by the dancing crowd. The words may continue the same as before, but are occasionally turned into connected stories, to the words of which the dance is carried on, as for example: "I went out hunting, a friend went with me, my friend shot a jaguar,

my friend got killed, etc.", or: we are well off at this place, here we get plenty of maize, etc.". During this stage of the dance longer words are used, as e.g. Ikare ekuaso, big alligator.

When dancing, the women's way of holding on to each other is different from that of the men, in that, with the arm bent, the hand is placed from the rear on the shoulder of the nearest neighbour (c.f. WEGNER 1932, Pl. XVII: I). Their singing merely consists of low, rhythmical humming, each dancer looking straight before her while moving her body gently up and down, to the accompaniment of soft, rhythmical stamping. The circle of dancers is slowly [105] moving round all the time. The hummed words are said to be names of four-footed animals, birds, trees and various plants.

Women's dances are not performed as frequently as are those of the men, who occasionally keep up their dancing for hours on the moonlit open place in front of the huts. The women prefer to look on when the men are dancing."

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116, 113

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